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**NL**

CERTIFIED MAIL - RRR

February 4, 1985

Director, Waste Management Division  
USEPA, Region V  
Attn: Brad Bradley (5 HE-12)  
230 S. Dearborn Street  
Chicago, IL 60604

Director  
Illinois Environmental Protection Agency  
Attn: Jim Frank/J. G. Hooker  
2200 Churchill Road  
Springfield, IL 62706

Deputy Chief, Environmental Control Division  
Illinois Attorney General's Office  
500 South Second Street  
Springfield, IL 62706

Subject: Agreement and Administrative Order by Consent  
Granite City Site  
RI/FS Work, Safety and QA/QC Plans

Gentlemen:

NL Industries, Inc. ("NL") has received the following communications from the USEPA - Region V and the Illinois EPA ("IEPA") transmitting comments by several agency personnel concerning the subject plans that were prepared by NL's consultant, O'Brien & Gere ("OB&G"):

**NL Industries, Inc.**  
Environmental Control Department  
P.O. Box 1090, Hightstown, N.J. 08520 Tel. (609) 443- 2499

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FEB 10 1985  
U.S. EPA, REGION V  
WASTE MANAGEMENT DIVISION  
Hazardous Waste Enforcement

USEPA  
 Illinois EPA  
 Illinois Attorney General  
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<u>AUTHOR</u>	<u>AGENCY</u>	<u>LETTER</u>	<u>SUBJECT</u>	<u>OBG SUBMITTAL</u>
John G. Hooker	IEPA	July 15, 1985 Safety Plan	Work Plan	6/12/85
John G. Hooker	IEPA	July 24, 1985	QA/QC Plan	6/12/85
Neil Meldgin	USEPA	July 30, 1985 Safety Plan QA/QC Plan	Work Plan	6/12/85
J. H. Adams, Jr.	USEPA August 19, 1985	(August 9, 1985)	QA/QC Plan	6/12/85
John G. Hooker	IEPA	November 25, 1985	QA/QC Plan	10/11/85
Brad Bradley	USEPA	December 11, 1985 Safety Plan QA/QC Plan	Work Plan	10/22/85
J. H. Adams, Jr.	USEPA December 17, 1985	(December 12, 1985)	QA/QC Plan	10/22/85

With respect to the agencies' comments, it is NL's position that the following citation from Paragraph 15(a) of the Order is applicable:

"In the event the submittal is disapproved in whole or in part, the U.S. EPA shall notify NL Industries of the specific inadequacies in writing, and shall indicate the necessary amendments or revisions... The writing containing such disapproval shall state, with specificity, (i) the extent that the work does not conform to [the statement of work for the Remedial Investigation and Feasibility Study], or (ii) the extent that it does not comply with applicable regulations..."

Although the agencies have elected to work independently, NL has heretofore had minimal problems in responding to comments submitted by each agency; our only stipulation has been that the time period for our response, provided by Paragraph 16, commences upon receipt of USEPA's final comments which, thus far, have been received after IEPA's comments. Three major difficulties have now arisen:

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1. Items in OB&G's second (i.e., October 22, 1985) submittal, which were not changed from the first (i.e., June 12, 1985) submittal, have now been disapproved.
2. Items that were not disapproved by one agency have been disapproved by the other.
3. The USEPA's QA/QC review is being extended to the RI/FS work plan.

With respect to the first situation, Paragraph 16 of the Order mandates that we, "...submit revisions to correct the inadequacies...", NL believes that the submittal of revised pages satisfies this requirement. Accordingly, OB&G has been very gracious in resubmitting the entire RI/FS Work Plan document package each time for the mutual convenience of NL and the agencies. This courtesy should not be construed as reopening the entire document for "afterthought" comments.

The USEPA has recently changed Project Coordinators, and we certainly recognize that new personnel may have different perspectives and opinions. However, pursuant to Paragraphs 15(a) and 25(b) of the Order, USEPA's Project Coordinators may not have the authority to disapprove aspects of submittals that have not been disapproved by a previous Coordinator. In addition, it is NL Industries' position that Paragraph 19(b) is certainly relevant; it provides for differences between the agencies; there are no provisions for differences within agencies.

The second problem is particularly apparent upon review of the USEPA's QA/QC comments that were transmitted by Mr. Bradley's December 17, 1985 letter. The referenced document makes repeated references to work that purportedly should be required on the basis of USEPA's review of information in IEPA's files. As the IEPA has not presented objections, and the USEPA has not justified the specific regulatory reasons that would serve as the basis for the desired additional work, NL Industries believes that the following citation from Paragraph 19(b) of the Order is applicable:

"With respect to such final agency action, the agencies will endeavor to develop a unified position but may maintain differing positions to the extent that such positions are mandated by differing statutes or regulations."

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Accordingly, these comments by the USEPA as currently presented are not perceived to be valid.

With respect to the third matter, the attached citation from Paragraph 25(a) is applicable:

"Each Coordinator shall be responsible for assuring that all communications from the other parties are appropriately disseminated and processed within his respective organization."

Via his July 30, 1985 letter, Mr. Neil Meldgin of the USEPA, notified NL of several perceived inadequacies in OB&G's June 12, 1985 document package; Mr. David Payne, of the USEPA's regional Quality Assurance Office was specifically assigned the responsibility for preparing comments regarding OB&G's Subtask 8d which solely addresses "Quality Assurance/Quality Control ('QA/QC')". This point was acknowledged by Mr. James H. Adams' August 9, 1985 memorandum which noted that, "If the Work Plan remains unchanged, this memo will be applicable only to the QAPP and Sampling Plan." Mr. Meldgin's letter clearly indicated that only the QA/QC review was delegated. Pursuant to Task 8d, as determined in Exhibit A of the Consent Order, the QA/QC plan:

"...shall be consistent with the requirements of EPA's Contract Laboratory Program. The plan shall address the following points:

1. QA Objectives for Measurement Data, in terms of precision, accuracy, completeness, representative[nes]s, and comparability.
2. Sampling Procedures.
3. Sample Custody.
4. Calibration Procedures, References, and Frequency.
5. Internal QC Checks and Frequency.
6. QA Performance Audits, System Audits, and Frequency.
7. QA Reports to Management.
8. Preventive Maintenance Procedures and Schedule.
9. Specific Procedures to be used to routinely assess data precision, representativeness, comparability, accuracy, and completeness of specific measurement parameters involved.
10. Corrective Action."

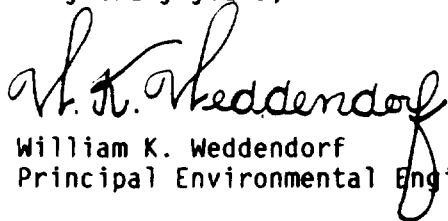
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Thus, QA/QC review is essentially limited to matters regarding sampling and analytical methods to implement investigations whose scope had not been previously disapproved by Mr. Meldgin. In addition, from Paragraph 14(a) of the Order, "The QA/QC Plan will include the sampling plan associated with task 3(a) as set forth on page 6 of Exhibit 'A'." Therefore, NL believes that the only aspect of the subject document package, which addresses the scope of the project, that may be subject to QA/QC review is the section of OB&G's sampling plan that addresses waste characterization.

Pursuant to Paragraph 16 of the Order, Attachments 1 through 3 to this letter respectively respond to the communications from Messrs. Hooker, Bradley, and Adams, which concern the October 22, 1985 plans prepared by OB&G. For ease of reference, I have incorporated copies of the above-noted letters at the end of each attachment. The revised pages of OB&G's plans will be submitted to you under separate cover. Upon your review of these comments, I would be pleased to schedule a meeting in Chicago to discuss them. If we are able to resolve our minimal technical differences, NL will instruct OB&G to promptly submit a final complete package to the agencies. Upon the resolution of access problems to our proposed sampling locations, we hope to commence work as early as possible in the Spring of this year.

If you have any questions regarding this matter, please telephone me at 609-443-2499.

Very truly yours,



William K. Weddendorf  
Principal Environmental Engineer

WKW/dcb

attachments

cc: F. D. Hale - OB&G  
K. Luly - IEPA, Collinsville

## ATTACHMENT 1

Response to November 25, 1985  
Comments by J. G. Hooker (IEPA)  
Concerning the QA/QC  
Plan for RI/FS  
at the Granite City Site.

### Comment No. 1

The IEPA requires documentation of detection limits 30 days prior to initiation of the field investigation (i.e., sampling) phase of the project. OB&G will comply with this requirement.

### Comment No. 2

The IEPA specifies that the spike recovery level should be within 75 to 125%. OB&G will comply with the requirement. If a spike recovery level falls outside this range the samples will be reanalyzed.

### Comment No. 3

The precision, accuracy, and completeness data found in Table 4 of Attachment 3 to the Quality Assurance Project Plan ("QAPP") were, indeed, generated for Atomic Absorption ("AA") direct aspiration methods for lead, cadmium, chromium, barium, and silver. The data for arsenic and selenium were obtained using gaseous hydride methods, and those for mercury were obtained using manual cold vapor methods as indicated on page 14 of Attachment 3 to the QAPP. Therefore, the precision, accuracy, and completeness data presented in Table 4 are appropriate for the solid samples.

As the table on page 14 of Attachment 3 indicates, the water samples will be analyzed using AA furnace methods. OB&G recently purchased a Perkin Elmer 3030B AA spectrophotometer for the quantification of metals using furnace methods. To date, insufficient data have been generated to develop a table analogous to Table 4 for furnace methods. However, OB&G fully intends to comply with Contract Laboratory Program ("CLP") protocol in the analysis of the water samples using the furnace methods, and will supply full QA/QC documentation with the data as they are reported to satisfy the agencies' requirements.

### Comment No. 4

OB&G will comply with the IEPA's requirements that data are to be reported in the same sequence that actual samples and QC samples are analyzed.



217/782-6760

November 25, 1985

Refer to: 11904002--Madison County  
Granite City/Taracorp  
Superfund/Technical Reports

Mr. William K. Weddendorf  
Principal Environmental Engineer  
NL Industries, Inc.  
P.O. Box 1090  
Highstown, New Jersey 08520

Dear Mr. Weddendorf:

*October 22, 1985*

The purpose of this letter is to respond to your submittal concerning the Work Plan, Site Safety Plan and Quality Assurance/Quality Control (QA/QC) Plan for the Taracorp Project.

The information provided for the Work Plan and Site Safety Plan are acceptable. The QA/QC Plan requires additional information prior to further review and subsequent approval. This information may be found in the attachment to this letter.

Should you have any questions, please feel free to contact me at 217/782-6760.

Very Truly Yours,

John G. Hooker, Project Manager  
Hazardous Substances Control Section  
Division of Land Pollution Control

JGH:dh

Attachment

cc: B. Cowles  
B. Shah  
N. Meldgin

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CONTROL



Attachment to Taracorp Letter

The following information is necessary for further review and subsequent approval.

Quality Assurance/Quality Control Plan

1. In terms of Documenting Detection limits utilized by your laboratory, please be advised that this Agency requires documentation of the limits 30 days prior to initiation of the sampling/analysis project.
2. As the detection limits stated are low the spike recovery level should be within 75-125%.
3. The Precision, Accuracy and Completeness Data suggests the values were obtained using the AA direct aspiration methods. If this is the case, then these values cannot be used for furnace methods. Please provide clarification of this matter.
4. O'Brien & Gere have stated that all raw data, (i.e. strip charts) will be provided to the Agency as a separate section of the final report. Please be advised that this Agency requires data to be reported in the same sequence that actual samples and the QC samples are analyzed.



## ATTACHMENT 2

### Response to December 12, 1985 Comments by J. H. Adams, Jr. (USEPA) Concerning QA/QC Plan for RI/FS at the Granite City Site

#### General

NL's concerns about the scope of USEPA's QA/QC review have been noted in the transmittal letter. In this section, we address our concerns regarding specific aspects of the Agency's QA/QC review. From Mr. Adams' December 12, 1985 letter:

"We have reviewed the draft QAPP in question, in relation to comments of July 31, 1985, and August 9, 1985, for the first draft QAPP by O'Brien & Gere. The second submission of October 22, 1985 is unacceptable. O'Brien & Gere did not address our comments of August 9, 1985."

NL is compelled to make the following points:

1. We never received the above-noted July 31, 1985 comments.
2. From Section II of Mr. Adams' August 9, 1985 memorandum (which is the only applicable portion as previously discussed in the letter transmitting this response), with respect to OB&G's QA/QC plan:

"There is insufficient time to write all deficiencies in this document at present. The QAPP needs to be rewritten to include, but not limited to, the following [nine comments]."

The USEPA is again reminded that Paragraph 15(b) of the Order necessitates that, "In the event the submittal is disapproved in whole or in part, the U.S. EPA shall notify NL Industries of the specific inadequacies in writing... The writing containing such disapproval shall state, with specificity, (i) the extent that the work does not conform to Exhibit 'A'..."
3. Attachment 4, to my October 21, 1985 letter, specifically responded to all of the nine comments noted by Mr. Adams' August 9, 1985 memorandum concerning the QA/QC Plan.
4. Finally, we are concerned about the allegation in Mr. Adams' October 22, 1985 memorandum that:

"The inorganic chemical waste characterizations, hydrogeological investigations, surface water investigations are limited in parameter coverage and matrix types."

In May, 1985, the USEPA's Office of Research and Development's Hazardous Waste Engineering Research Laboratory issued the document, entitled "Guidance on Remedial Investigations Under CERCLA". As noted by this document:

"At any site, there is potential for conducting investigations far beyond the needs of remedial responses of enforcement actions. The temptation to pursue such expensive studies should be avoided in favor of a balanced, justifiable, cost effective approach that satisfies site-specific objectives."

Accordingly, we believe that our proposed study adequately addresses the potential issues for this site.

#### Comment No 1

Task 3b of Exhibit 4 to the Order requires NL to "develop and conduct a program to determine the present and potential extent of ground water contamination."

As the Order is issued pursuant to Section 106 of CERCLA, groundwater can only be determined to be contaminated if it presents "an imminent and substantial endangerment to the public health or welfare". In accordance with 40 CFR 141.2(b), " 'Contaminant ' means any physical chemical, biological, or radiological substance or matter in water." As noted by Mr. Adams, DB&G is proposing to test for the 8 metals for which maximum contaminant levels are specified by the National Interim Primary Drinking Water Regulations. This is believed to satisfy the "necessary and sufficient" requirements of the May, 1985 guidance document".

Incidentally, this comment addresses the scope of the RI/FS and, as noted in the transmittal letter, may not be under Mr. Adams' purview.

#### Comment No. 2

With respect to the groundwater aspect of this comment, NL's Comment No. 7 in Attachment 4 to our October 21, 1985 transmittal addressed the validity of filtration of groundwater samples. Mr. Adams has merely repeated his desire for filtration without furnishing justification or specificity as required by the Order. NL's justification is as follows.

When groundwater flows through a granular aquifer at a characteristically slow rate, suspended solids are not normally associated with the water. If a groundwater sample could be obtained "isokinetically" (i.e., without any disturbance of the aquifer), the parameter analysis results would represent dissolved substances because no suspended sediments would be involved. However, as a result of pumping, the groundwater velocity increases as it approaches a monitoring well. This artificially induced velocity may be sufficient to suspended formation particles and carry them into the well.

Thus, groundwater samples taken from monitoring wells may include variable amounts of suspended sediments which do not represent true groundwater quality.

This problem is more frequently associated with monitoring wells rather than water supply wells, as the regional locations and screened formations of the latter may be selected by the hydrogeologist. Significant amounts of solids are not present in water from supply wells as a result of (1) well construction, (2) extensive well development [i.e., pumping] prior to placing the wells in service and (3) the wells being in constant service. With respect to well construction, the following lengthy article addresses the attention that is lavished upon the design of the screen and the gravel pack for water supply wells.

Williams, E. B.

"Fundamental Concepts of Well Design"  
Groundwater, 19, No. 5, pp. 527-542, (1981)

Proper specifications of these items is based upon detailed analyses of formation samples obtained during previous drilling; this is not practical during the emplacement of monitoring wells. It is of considerable interest that the article repeatedly refers to the gravel pack as an "artificial filter" which serves to prevent the entrance of formation materials. Thus, filtration of groundwater samples is being performed in municipal wells by the carefully engineered gravel pack.

As a result of the USEPA's specification of a maximum contaminant level of 1 to 5 turbidity units ("TU"), it is the Agency's intent that drinking water from surface sources should be treated to render it essentially uniformly free of visible suspended matter. The expectation that groundwater should be totally free from turbidity problems is clearly evident from 40 CFR 141.13 and 141.22(d) which exempt water systems utilizing water obtained from groundwater sources from the turbidity standard. Thus, an artificially turbid groundwater sample should be restored to reflect its original turbidity of less than 1 to 5 TU; the simplest and most reliable method for accomplishing this task (i.e., by using a 0.45 micron filtration) is endorsed by the following reference documents:

Barker, J. F. and Reardon, E. J.

Field Guidance for Sampling and Chemical Analysis of Groundwaters

in "A Short Course - Field Methods in Contaminant Hydrology", p. 1,  
University of Waterloo, Department of Earth Sciences, Waterloo,  
Ontario, 1981.

Illinois Environmental Protection Agency, Division of Land Pollution  
Control, Springfield, Illinois

Water Monitoring Instruction Package, p. 2.

Johannsen, S. D. and Nichols, D. G.

**Groundwater Monitoring Techniques for Low-Level Radioactive Disposal Sites**

Paper presented June 16, 1982 before the U.S. Nuclear Regulatory Commission Symposium of Low-Level Waste Disposal at Arlington, Virginia.

Saar, R. A. (Senior Scientist, Geraghty & Miller, Inc., Syosset, New York) and Braids, O. C. (Associate, G&M)

Personal Communication to NL Industries, Inc. (August 9, 1982).

Thatcher, L. L. and Janzer, V. J.

**Techniques of Water Resources Investigation of the United States Geological Survey**

Book 5, Chapter A5, p. 11.

U. S. Environmental Protection Agency and Minnesota Pollution Control Agency

Administrative Order and Response Order by Consent in the Matter of: NL Industries, Inc., Taracorp, Inc., Golden Auto Parts Company, Inc. Site in St. Louis Park, Minnesota

Exhibit A, p. 10, March 8, 1985.

Ibid.

Approved Integral and Enforceable Appendix entitled "Program for Above-Ground Response Measures at the NL Industries, Taracorp Industries, Golden Auto Parts Site in St. Louis Park, Minnesota", pp. 65-66.

Copies of the above-noted materials, will be furnished upon request.

We agree that surface water samples should not be filtered, but the suspended solids analysis will not "provide helpful data interpretation" in ascertaining the risk presented by the site.

Comment No. 3

Characterization of the waste pile will be done by EP Toxicity testing, which relates to the impact upon substances for which drinking water standards exist.

Comment No. 4

Mr. Adams indicates that, "No changes were made between the first and second QAPP submissions". We maintain that significant changes were, in fact, made to the QAPP for the second submission, pursuant to comments received from the IEPA and USEPA. Specifically, the following modifications and additions were incorporated into the October 22, 1985 submission:

1. Page 3 - "Sampling Procedures"  
Additional text regarding the sampling plan.
2. Page 3 - "Sample Custody"  
Additional text regarding sample collection and custody.
3. Page 4 - "Equipment Calibration"  
Additional text regarding equipment calibration relative to QA/QC protocols.
4. Page 4 - "Analytical Procedures"  
Additional text regarding sample collection and handling.
5. Page 5 - "Data Analysis"  
Modification to text regarding availability of data and QA/QC information.
6. Attachment 1 - "Primary Contacts"  
Addition to first submission.
7. Attachment 2 - "Project Organization"  
Addition to first submission.
8. Attachment 3 - "Laboratory Quality/Quality Control Program"  
Addition to first submission.
9. Attachment 4 - "Resumes"  
Addition to first submission.

The above-noted additions and modifications did result in a substantially changed QAPP. However, Mr. Adams' comment regarding the "...QC Procedures identified on page 5 of the QAPP..." is correct. The corrections to the referenced paragraph on page 5 of the QAPP were inadvertently omitted from the second submission. The noted paragraph should be replaced with the following:

"The major elements of the QA/QC program are: instrumental tuning and calibration criteria; defined analytical protocols; reagent blanks; matrix spikes; and duplicate spikes. A reagent blank will be included in each batch of up to twenty samples analyzed. Matrix spikes will also be included in each batch up to twenty samples analyzed. A field blank consisting of diatomaceous earth for soil, or distilled water for water will also be included as quality control samples. Duplicate analyses will be performed on 10% of both off-Site soil and groundwater samples."

Comment No. 5

Mr. Adams states that the Laboratory QA/QC Program (Attachment 3 to the QAPP) "...is generic and does not provide specific QA/QC details." If Mr. Adams would be more specific, we will address his concerns. At this time we can only surmise that the desired QA/QC details relate to method-specific requirements. The analytical methods which are referenced on page 14 of Attachment 3 to the QAPP specify QA/QC requirements for each procedure. The water methods, found in EPA Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020 (revised 3/83), reference part 10 of the Atomic Absorption Section of that document for specific QA/QC requirements. The QA/QC activities delineated in part 10 of the EPA document will be supplemented with those outlined in the corrected paragraph on page 5 of the QAPP as shown above for the water samples, where frequencies of QC samples (i.e., blanks, spikes, and duplicates) were not specified.

With respect to QA/QC procedures for the soil samples, specific details for these activities are also delineated in the analytical methods referenced on page 14 of Attachment 3 to the QAPP. The methods are found in Test Methods for Evaluating Solid Waste - Physical/Chemical Methods SW 846 (1984). The specific QA/QC activities noted by the analytical procedures for the soil samples will also be supplemented with those outlined in the corrected paragraph on page 5 of the QAPP as shown above, where frequencies of QC samples (i.e., duplicates, spikes, and blanks) are not specified.

As indicated, we have incorporated these specific QA/QC activities by referencing the methods in the EPA documents, which in turn either reference or state explicitly, those QA/QC activities that are required for each method. We did not rewrite the procedures and QA/QC activities as we did not believe that this was appropriate.

Comment No. 6

Mr. Adams indicates his concern that sulfate concentrations may interfere with the determination of lead concentrations and states that the level of QA/QC effort will have to be increased significantly. We are aware that the presence of sulfate may suppress the detection of lead. However, we do not feel that this would be cause for a significant increase in the level of QA/QC effort as it has been outlined above. Our analytical method referenced for the water samples, EPA Method 239.2, specifies that lanthanum nitrate solution is to be added to the sample to suppress any sulfate interference.

The analytical method referenced for analyzing lead in the soil samples, EPA Method 7420 does not explicitly state how sulfate interference is to be managed, other than stating that background correction is to be utilized. Accordingly, we will be adding lanthanum nitrate to the digestate from the soil samples in a manner analogous to the water samples in order to suppress sulfate interference in the soil samples. It should be noted that although the concentrations of sulfate in the soil samples are expected to be considerably higher than those in the water samples, the dilutions required to bring the lead concentrations (which are also expected to be relatively high) into the linear range of the AA spectrophotometer should decrease the sulfate concentrations by several orders of magnitude.

The addition of lanthanum nitrate solution per Method 239.2 will suppress sulfate interference up to 1500 ppm in the groundwater samples, except in the samples from well C108D, for which sulfate concentrations of 2300 and 2950 ppm have been observed. To ensure that the sulfate interference is accounted for, the percent recoveries of the spikes will be reviewed as part of the routine QA/QC activities. If the percent recoveries are outside the range specified by the agencies, sulfate interference will be investigated as the cause. More lanthanum nitrate solution will be added to the samples in question to further suppress the sulfate interference until spike recoveries are satisfactory. If the addition of lanthanum nitrate solution does not improve the spike recoveries, other causes for the control problem will be investigated.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
230 SOUTH DEARBORN ST.  
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF  
5HE-12

Mr. William K. Weddendorf  
Principal Environmental Engineer  
N.L. Industries, Inc.  
P.O. Box 1090  
Highstown, New Jersey 08520

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ENVIRONMENTAL  
CONTROL

Dear Mr. Weddendorf:

Attached for your review are the comments of David Payne, U.S. EPA -  
Region V Quality Assurance Office, pertaining to the draft RI/FS  
Workplan, QAPP, and Site Safety Plan submitted by O'Brien and Gere  
for the Granite City Site.

This submittal represents U.S. EPA's final set of comments regarding  
the above-referenced subject matter.

If you have any questions or comments, please contact me at (312)  
886-4742.

Sincerely,

*Brad Bradley*  
Brad Bradley, Remedial Project Manager  
CERCLA Enforcement Section (5HE-12)

Attachment

cc: John Hooker



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V**

**DATE:** December 12, 1985

**SUBJECT:** Quality Assurance Project Plan (QAPP) - 2nd Submission Dated  
October 22, 1985 - NL Industries, Inc., Granite City Site, Granite City, IL

**FROM:** James H. Adams, Jr., Chief  
Quality Assurance Office

**TO:** Norman Niedergang, Chief  
CERCLA Enforcement Section

Attention: Brad Bradley

We have reviewed the draft QAPP in question, in relation to our comments of July 31, 1985, and August 9, 1985, for the first draft QAPP by O'Brien and Gere. The second submission of October 22, 1985 is unacceptable. O'Brien and Gere did not address our comments of August 9, 1985.

The inorganic chemical waste characterizations, hydrogeological investigations, surface water investigations are limited in parameter coverage and matrix types. These studies would not be considered acceptable if they were compared to what U.S. EPA would do as a federal-lead remedial investigation.

Our Office's August 9, 1985 review considered the QAPP as not acceptable. The October 22, 1985 submission of the QAPP made few, if any, changes to the initial QAPP. The second QAPP is still not acceptable.

**DETAILS**

1. Attachment A to this memo is the current list of metals that are currently determined as routine analytical services (RAS) under the U.S. EPA Contract Laboratory Program (CLP). They should be considered as a guide to characterize the wastes, groundwater, etc. as required by the Work Plan. The Illinois EPA in their May, 1984 report for this site did not test for all metals in Attachment A and did not provide detection limits as low as the CLP for groundwater; however, the Illinois EPA found boron, iron, manganese, arsenic, cadmium, lead, nickel, and zinc to be of interest for future monitoring studies. O'Brien and Gere is proposing to test for only the 8 metals specified by the National Interim Primary Drinking Water Regulations.

Past Illinois EPA data for groundwater indicates sulfate, chloride, alkalinity/acidity, pH, total dissolved solids would also be of interest for this monitoring. Other parameters may also be of interest for the groundwater.

The limited scope of monitoring by O'Brien and Gere does not appear suitable for characterization of the site.

2. O'Brien and Gere proposes that metals be determined only on filtered water samples (both ground and surface waters). We recommend that groundwaters be tested both as unfiltered and filtered sample aliquots and the surface waters be tested as unfiltered sample aliquots. Suspended solids should also be determined on these samples to provide helpful data interpretation.

3. Characterization of the waste pile is to be done only by EP Toxicity testing except for total lead. This test does not provide a ready waste characterization in that it is applicable only to subsequent disposal under RCRA regulations. Lead is the only metal to be determined as a "total constituent" in the waste pile.

4. The QAPP is basically unacceptable. No changes were made between the 1st and 2nd QAPP submissions. For example, we pointed out the QC Procedures identified on page 5 of the QAPP referred to details of the CLP organic analysis program. These details were not changed and are still not applicable to the inorganic analyses for the Granite City site.

5. Attachment 3 to the QAPP provides a Laboratory QA/QC Program for the O'Brien and Gere Laboratory. This attachment is generic and still does not provide specific QA/QC details.

6. Our August 9, 1985, recommended the level of QA/QC effort will have to be markedly increased if accurate lead concentrations are to be determined in the presence of interfering sulfate concentrations. This was not addressed by O'Brien and Gere's recent submission.

#### RECOMMENDATIONS

1. Expand the list of chemical parameters and sample matrices (unfiltered water aliquots) to be tested. Use the CLP RAS list as a guide for metals to be tested. Other inorganic chemical parameters in water should be included (sulfate, chloride, etc.) that are leachable and are water contaminants.

2. When the list of parameters to test has been determined by Region V, O'Brien and Gere should rewrite their QAPP from scratch. We can meet with them at that time to provide guidance for the QAPP preparation.

cc: T. Rutter, ERRB  
Sue Hong, CES

## Table 4-2

## METHOD DETECTION LIMITS FOR RAS INORGANICS FROM CLP

Element	Contract Required Detection Level <sup>1,2</sup> (ug/L)
Aluminum	200
Antimony	60
Arsenic	10
Barium	200
Beryllium	3
Cadmium	3
Calcium	3000
Chromium	10
Cobalt	30
Copper	25
Iron	100
Lead	3
Magnesium	3000
Manganese	15
Mercury	0.2
Nickel	40
Potassium	3000
Selenium	3
Silver	10
Sodium	3000
Thallium	10
Tin	40
Vanadium	30
Zinc	20
Cyanide	10

- 1:** Any analytical method specified in SOV Exhibit D may be utilized as long as the documented instrument or method detection limits meet the Contract Required Detection Level (CRDL) requirements. Higher detection levels may only be used in the following circumstance:

If the sample concentration exceeds two times the detection limit of the instrument or method in use, the value may be reported even though the instrument or method detection limit may not equal the contract required detection level.

- 2:** These CRDL are the instrument detection limits obtained in pure water that must be met using the procedure in Exhibit E. The detection limits for samples may be considerably higher depending on the sample matrix.

### ATTACHMENT 3

Response to December 11, 1985 Comments  
by B. Bradley (USEPA) Concerning  
Work, Safety and QA/QC Plans  
for RI/FS at the Granite City Site

General Comments No.'s 1 and 3

This disapproval conflicts with the July 30, 1985 letter from Mr. Neil Meldgin. In addition, NL has justified the proposed analytical protocol in the previous attachment. For your information, it is impossible to directly analyze samples for nitric acid, sodium hydroxide, and sulfuric acid.

General Comment No. 2

We agree that the runoff samples should not be filtered.

General Comment No. 4

The USEPA contact will be changed to:  
Brad Bradley

Specific Comment No. 1

The precipitation conditions of the day, prior to and, during the March 15 site inspection will be specified by OB&G in order that their observations may be better interpreted.

Specific Comment No. 2

Level C decontamination procedures will be incorporated into Appendix B of the RI Work Plan.

Specific Comment No. 3

Mr. Bradley commented that the background well locations and monitoring well depths should be specified in the QAPP/Sampling Plan. The on-Site monitoring well locations, which were chosen by the Illinois Environmental Protection Agency (IEPA) and the Illinois State Geological Survey (ISGS), are identified in Figure 1 of the Sampling Plan and Figure 4 of the RI Work Plan.

Four Monitoring wells were constructed in October, 1982. These wells are identified as Wells C101, C102, C103, and C104. In July 1983, four well nests were installed. These are identified on the figures referenced above as Wells C105S+D, C106S+D, C107S+D, and C108S+D. The S refers to the shallow well of the nested pair, whereas the D refers to the deep well of the pair.

Based on data available to us, Well C107S has the highest groundwater elevation and appears to have groundwater quality representative of background conditions. Therefore, in order to initiate the field activities, Well C107S will be assumed to be the background well.

Monitoring well depths are as follows:

<u>Well</u>	<u>Depth from Grade (ft)</u>
C101	25
C102	25
C103	25
C104	27
C105S	26
C105D	35.5
C106S	20.8
C106D	35.8
C107S	22
C107D	35
C108S	20
C108D	32



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 5**

**230 SOUTH DEARBORN ST.**

**CHICAGO, ILLINOIS 60604**

REPLY TO THE ATTENTION OF:

**5HE-12**

DEC 11 1985

**RECEIVED**

DEC 16 1985

**ENVIRONMENTAL  
CONTROL**

Mr. William K. Weddendorf  
Principal Environmental Engineer  
N.L. Industries, Inc.  
P.O. Box 1090  
Highstown, New Jersey 08520

Dear Mr. Weddendorf:

I have reviewed the RI/FS Workplan, QAPP, and Site Safety Plan submitted by O'Brien and Gere for the Granite City Site and would like to make the following comments:

General:

1. More constituents should be included in the list of compounds to be sampled. At a minimum, sampling for antimony, copper, iron, manganese, nickel, nitric acid, sodium hydroxide, sulfuric acid, and zinc should also be conducted since elevated levels of these contaminants have been identified in previous studies at the site.
2. The runoff samples should not be filtered.
3. Analyses for suspended solids, alkalinity, and acidity should be conducted.
4. The U.S. EPA contact should be changed to:  
Brad Bradley, (312) 886-4742

Specific:

RI/FS Workplan

Subtask 3d - The weather conditions prior to and including the March 15 site inspection should be specified.

Safety Plan

Level C decontamination procedures should be listed.

QAPP/Sampling Plan

Background well locations and monitoring well depths should be specified.

Mr. David Payne, U.S. EPA, will provide further comments under a separate cover letter. As soon as you have received all comments regarding the RI/FS Workplan, QAPP, and Safety Plan, I would like to arrange a meeting with you, John Hooker, and David Payne to discuss the comments and thereby allow the package to be finalized.

If you have any questions or comments regarding this letter, please contact me at (312) 886-4742.

Sincerely,

*Brad Bradley*

Brad Bradley  
Remedial Project Manager, (5HE-12)

cc: John Hooker